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Army Test and Training Instrumentation Conference (ATTIC) Findings to Date

by

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APM for Test, Training and Technology Integration (APM T3I)

ATTIC Administrator

Obstacles and Incentives

- ★ Incentives
  - The two communities can work together to leverage resources
    - Testers can perform R&D
    - Trainers can procure large quantities of systems
    - Testers then buy their smaller quantities of the systems
  - Benefits:
    - Trainers: Free or Low Cost R&D
    - Testers: Recoup R&D investment with discounted procurements
    - Testers: Can leverage existing procurement, repair, and spares secured by Training
  - Examples: Flexible Interoperable Transceivers (FIT), Light Weight Personnel Detection Devices (LW PDD), Mobile Automated Instrumentation Suite (MAIS) Dismounted Troop (DMT)
  - Overall Benefit: Army gets better technology at substantially lower cost to both communities

Obstacles and Incentives

- ★ Incentives (Continued)
  - If standards are put into place, the two communities can pursue:
    - Collection of DT data during training and OT missions to reduce overall test costs
    - Joint upgrades and maintenance
    - Built-in Test and Training Equipment on-board combat systems
    - Singular instrumentation suites and installations for multiple missions
  - But . . .
    - A standards panel must be created for Army Test and Army Training
      - Standards panels do exist for DoD Test and DoD Training, but not merged yet.

Annual ATTIC Objectives

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★ ATTIC98: Assess feasibility of working together

- Found great interest in both communities
- Amount of investment overlap substantial
- Designed draft structure for ATTIC99

★ ATTIC99: Identify the Opportunities to be Taken to Merge Test and Training Acquisitions and Technologies

- Underway, with numerous findings and approaches
- Identifying draft structure for ATTIC2000
- Outputs will be examined for input to POM02 as identified, leveraged investments in both communities
- A General Officer panel's seal of approval will be sought in late CY99 (MG Sylvester (TRADOC), MG Madora (ATEC), BG Lovelace (DAMO-TR), Dr. Foulkes (DACS-TE), and BG Bond (STRICOM-Chair)) to validate leveraged investment approach. A draft MOA has been issued to establish this panel.

★ ATTIC2000: Begin the steps to leverage the communities technological investments and capabilities according to the priorities established by the ATTIC99 and GO Panel membership. Establish focus areas for ATTIC2001.

ATTIC2001 and out: Continue to leverage for technologies and capabilities emerging POM cycles, identifying the next year's technological focuses.

Changes to ATTIC Working Group Structure

Streamlining of the WG Structure from ATTIC99->ATTIC2000

Five Technical WGs:

TWG1: Data Exchange and Standardization

TWG2: Test and Training Policy and Protocol

TWG3: Monitoring System Under Test/Training

TWG4: Battlefield Environment Generation

TWG5: Combat Vehicle Platforms (Surrogate/Actual)

Two Administrative WGs:

AWG1: Test and Training Requirements

AWG2: Test and Training Acquisition Process Unification

Six WGs:

Data Exchange and Standardization

C4I WG

Instrumentation Technology for Test and Training (IT3)

Battlespace Generation

Combat Vehicle Platforms (Surrogate/Actual)

Requirements and Process Unification

Each panel has two chairs - one from Test, and one from Training

Future ATTIC Meeting Structure

Joint with NTSA, ITEA, AUSA, etc. Sessions in same building if possible

Monday	Tuesday	Wednesday	Thursday	Friday
TRAVEL	Data Exchange and Standardization		Battlespace Generation	TRAVEL
	Combat Vehicle Platforms (Surrogate / Actual)		Instrumentation Technology for Test and Training (IT3)	
	Requirements And Process Unification		C4I	

ATTIC

- ATTIC2000 Sessions to begin 31 Jan - 4 Feb 2000 at Dulles Airport, VA
  - May invite GO Panel to attend in tandem with ATTIC2000 sessions
- Design: A one week session with ALL WG meetings held during that session
  - Maximizes travel dollars
  - Maximizes interchange between WGs
  - Focuses on the WG-suggested and GO-panel approved technology drivers

7-9 July Findings

ATTIC

★ Core Technologies for Instrumentation Identified

- Data Acquisition
  - Embedded
    - Databus Reader
    - ADOCS
  - Non-Embedded
- Data Transfer
  - Transceivers
    - Modulation
  - Antenna
  - Protocols
  - Compression
- **Data Processing**
- Information Sharing
- **Tactical Engagement Systems**
  - **Laser <u>and laser alternatives</u>**
- Audio
- Imaging
- Sensors
  - GPS
  - Radar
- Encryption
- Displays
  - Holography
  - LCD
  - CRT
- Spectrum Usage
  - Frequency Monitoring
- Position Location
- Database
- Digitization [Word Stream or other?]
- **Information Management**
- Data Storage/Retrieval
- **Maps/Terrain** <u>[Digitized? -- cost, avail, acquire, maintain]</u>

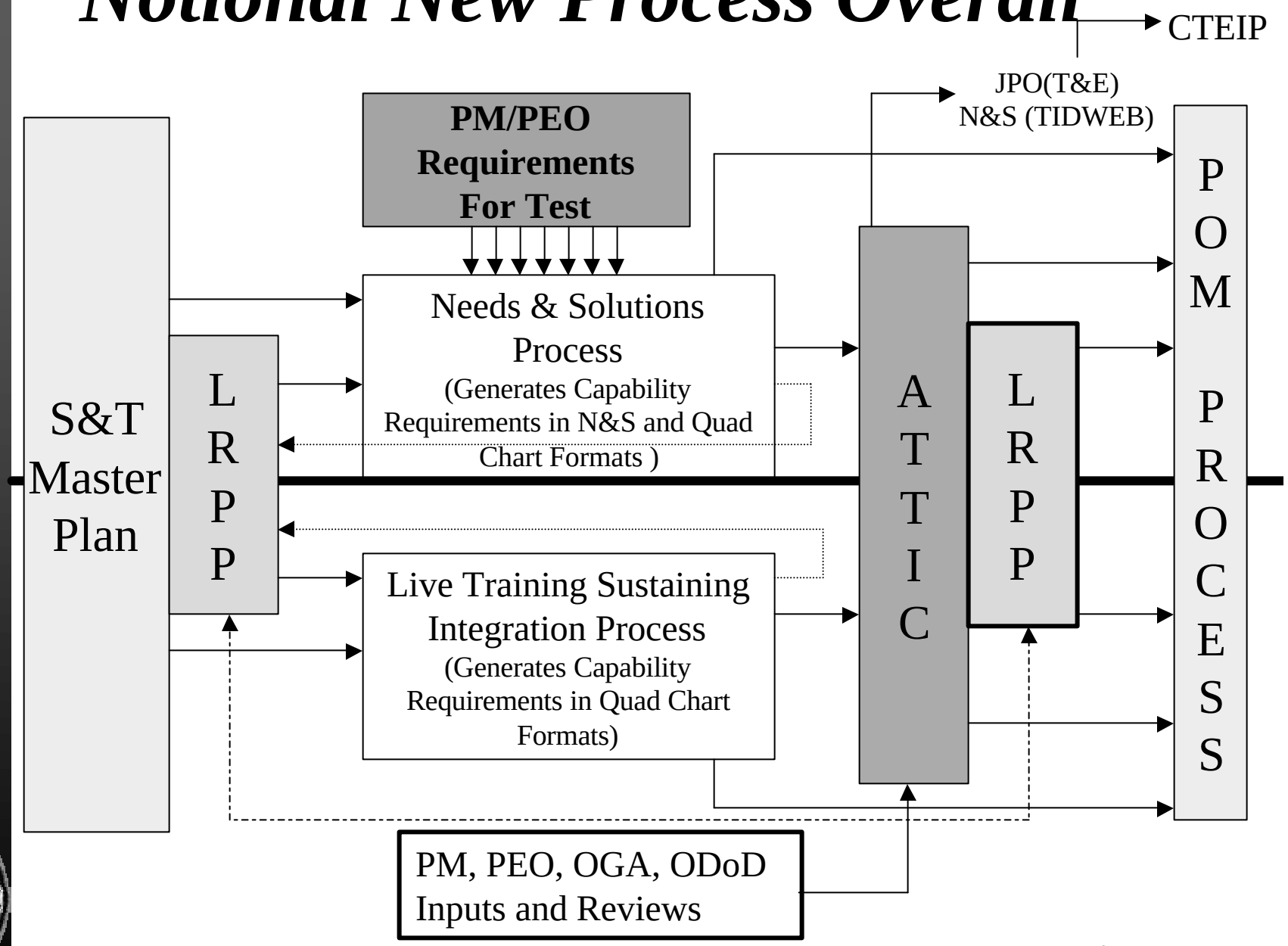
Instrumentation Technology Groups

Acquisition	Data Processing	Data Storage	Data Presentation	Data Transfer
Sensors	***Electronics***	***Memory***	***Displays***	***Medium***
EO	**Microprocessors**	**RAM**	**CRT**	**Optical Laser**
IR	**MEMS**	**ROM**	**LCD**	**Acoustic**
Acoustic	**EO Processors**	**Bubble**	**Holography**	**Inductive EM**
Magnetic	**Parallel CPU's**	**Tape**	**3D Stereo**	**Transceivers**
Seismic	**Voice Recog**	**Magnetic Disk**	**Helmet Mntd**	**Bus's**
Imaging	**AI**	**Optical Disk**	**Retinal Imaging**	**Modulation**
L Band	**Cognitive**	**Wire**	**Acoustic**	**LAN**
Ka Band	**GPS**			**Antenna**
Laser	**Neural Net**			
MMW	**Patt Recog**			
UV	**Database Mgmt**			
Ultra Wideband	**Data Analysis**			
CCD	**Algorithms**			
Antenna				

Materials

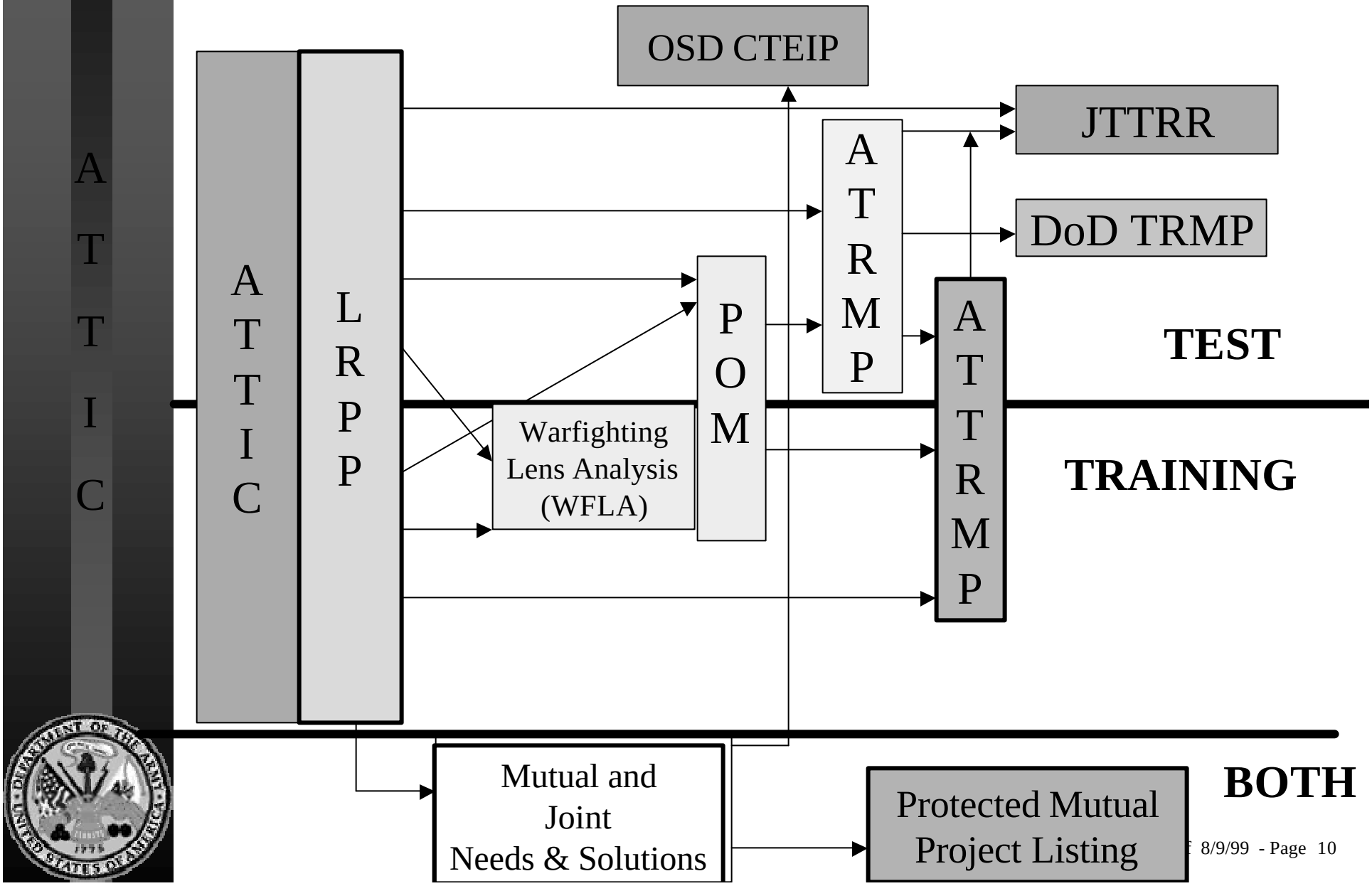
Power	***Packaging***
Batteries	**Alloys**
Fuel Cells	**EMI**

Notional New Process Overall



RED Lines represent changes from current processes

Notional New Process Outputs



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Summary

- ★ **The issues and goals of the ATTIC sessions to date can ALL be addressed without any dramatic cost to the Army**
- ★ **By empowering the work force, key technologies and issues are better conveyed to the leadership**
- ★ **Joint and mutual investments offer the Army the opportunity to save substantial resources AND open the door to new funding lines**
- ★ **PMs, PEOs, Academia, Industry, and OGAs/ODOD Agencies able to share in Army investments, technologies, and planning**
- ★ **All Test and Training investments validated and linked to S&T Master Plan allowing very early identification of mutually beneficial investments**
- ★ **Both communities benefit!**